Process	Kalman filter (KF)	Extended Kalman filter (EKF)	Unscented Kalman filter (UKF)
		1	
Prediction	$\bar{\mathbf{x}} = \mathbf{F}\mathbf{x} + \mathbf{B}\mathbf{u}$	$\bar{\mathbf{x}} = f(\mathbf{x}, \mathbf{u}), \ \mathbf{F} = \frac{\partial f(\mathbf{x}_t, \mathbf{u}_t)}{\partial \mathbf{x}} \bigg _{\mathbf{x}_t, \mathbf{u}_t}$ $\bar{\mathbf{P}} = \mathbf{F} \mathbf{P} \mathbf{F}^T + \mathbf{Q}$	$\bar{\mathbf{x}} = \sum w^m \mathbf{\mathcal{Y}}, \ \mathbf{\mathcal{Y}} = f(\mathbf{\chi})$
(Time update)	$\mathbf{\bar{P}} = \mathbf{F}\mathbf{P}\mathbf{F}^T + \mathbf{Q}$	$\bar{\mathbf{P}} = \mathbf{F} \mathbf{P} \mathbf{F}^T + \mathbf{Q}$	$\bar{\mathbf{P}} = \sum w^c (\mathbf{y} - \bar{\mathbf{x}}) (\mathbf{y} - \bar{\mathbf{x}})^T + \mathbf{Q}$
			$\mu_z = \sum w^m \mathcal{Z}, \mathcal{Z} = h(\mathcal{Y})$
		1	$\mu_z - \sum w  \boldsymbol{\mathcal{Z}}, \boldsymbol{\mathcal{Z}} - h(\boldsymbol{\mathcal{Y}})$
Update	$y = z - H\bar{x}$	$\mathbf{y} = \mathbf{z} - h(\bar{\mathbf{x}}), \ \mathbf{H} = \frac{\partial h(\bar{\mathbf{x}}_t)}{\partial \bar{\mathbf{x}}}$	$\mathbf{y} = \mathbf{z} - \boldsymbol{\mu}_z$
(Measurement update)	$S = H\bar{P}H^T + R$	$\mathbf{S} = \mathbf{H} \mathbf{\bar{P}} \mathbf{H}^{T} + \mathbf{R}$	$\mathbf{P}_z = \sum w^c (\mathbf{Z} - \boldsymbol{\mu}_z) (\mathbf{Z} - \boldsymbol{\mu}_z)^T + \mathbf{R}$
	$\mathbf{K} = \mathbf{\bar{P}H}^{T}\mathbf{S}^{-1}$	$\mathbf{K} = \mathbf{\bar{P}} \mathbf{H}^T \mathbf{S}^{-1}$	$\mathbf{K} = \left[\sum w^{c} (\mathbf{\mathcal{Y}} - \bar{\mathbf{x}}) (\mathbf{\mathcal{Z}} - \boldsymbol{\mu}_{z})^{T}\right] \mathbf{P}_{z}^{-1}$
	$x = \bar{x} + Ky$	$x = \bar{x} + Ky$	$x = \bar{x} + Ky$
	$P = (I - KH)\bar{P}$	$P = (I - KH)\bar{P}$	$P = \bar{P} - KP_zK^T$